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EXAMINER

NGUYEN, DUNG X

ART UNIT

PAPER NUMBER

2638

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/765,712

Applicant(s)

YOUNG, RANDY K.

Examiner

Dung X. Nguyen

Art Unit

2638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 29 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1 - 98 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 - 21, 55 - 60, and - 98 is/are allowed.
- 6) ☒ Claim(s) 22, 28, 31, 32, 34 - 36, 38, 42, 45, 46, 48, 52, 53, 55, 62, and 64 is/are rejected.
- 7) ☒ Claim(s) 23 - 27, 29, 30, 33, 37, 39 - 41, 43, 44, 47, 49 - 51, 62, and 63 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Response to Arguments

1. Applicant's arguments, filed on September 29, 2005 have been fully considered and are persuasive. However, upon further consideration, a new ground(s) of rejection is made in view of Doi et al. (US patent # 4,215,335).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 22, 28, 31, 32, 34, 38, 42, 48, 52, 55, 61, and 64 are rejected** under 35 U.S.C. 102(b) as being anticipated by Doi et al. (US patent # 4,215,335).

Regarding claim 22, Doi et al. discloses a modulator/demodulator system, comprising:

- Applying one of plurality of time scales (22 of figure 2) to one of a pair (Bi-18 of figure 2)) of substantially matched base signals; combines ((30) of figure 2) the timed scaled with the other one of the pair of base signals to form a doublet with the information; and transmits the doublet (column 7, lines 35 – 37); and
- A receiving system (figure 8); which receives the doublet and extracts information from the doublet based on the one of the plurality of time scales which was applied.

Regarding claim 28, as followed by the analysis analyzed in claim 22, Doi et al. further discloses (figure 2) that wherein the information comprises a message embedded prior to the transmission of the doublet.

Regarding claim 31, as followed by the analysis analyzed in claim 22, Doi et al. further discloses (figure 2) that wherein at least one of the pair of substantially matched base signals contains the information and the receiving system (figure 8) extracts the information from the one of the pair of substantially matched base signal in the doublet with the information.

Regarding claim 32, Doi et al. discloses a modulator/demodulator system, comprising::

- Applying one of plurality of time scales (22 of figure 2) to one of a pair (Bi-18 of figure 2)) of substantially matched base signals;
- Combining ((30) of figure 2) the timed scaled with the other one of the pair of base signals to form a doublet;
- Transmits the doublet (column 7, lines 35 – 37) in to the environment;
- Receiving the doublet (figure 8); and
- Extracting information from the doublet based on the one of the plurality of time scales which was applied.

Regarding claim 34, as followed by the analysis set forth in claim 32,, Doi et al. further discloses (figure 8) that extracting the information the one of the pair of substantially matched base signals in the doublet.

Regarding claim 38, as followed by the analysis set forth in claim 32, Doi et al. further discloses that wherein the information comprises a message embedded prior to the transmission of the doublet.

Regarding claim 42, Doi et al. discloses (figure 2) a transmission system for trasmitting information, comprising::

- an encoding system (figure 2) which applies one of a plurality of time scales (22, 26) to one of a pair (Bi-18) of substantially matched base signals;
- A combiner (30) which combines the timed scaled base signal with the other one of the pair of base signals to form a doublet (column 7, lines 35 – 37); and
- A transmitter which transmits the doublet with the information.

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Regarding claim 48, Doi et al. discloses (figure 2) a method for transmitting information, comprising::

- Applying one of plurality of time scales (22) to one of a pair (Bi-18) of substantially matched base signals;
- Combining (30) the timed scaled with the other one of the pair of base signals to form a doublet with the information; and
- Transmitting the doublet (column 7, lines 35 – 37).

Regarding claim 52, as followed by the analysis set forth in claim 48, Doi et al. further discloses (figure 2) that imbedding the information in the one of the pair of substantially matched base signal (column 1, lines 48 – 52)

Regarding claim 55, Doi et al. discloses a receiver system (figure 8) for receiving transmitted information comprising:

- A receiver which receives a doublet, wherein the doublet comprises a combined pair of substantially matched base signals and wherein one of a plurality of time scales (22 of figure 2) to one of a pair (Bi-18 of figure 2)) of substantially matched base signals; and
- A processing system (figure 8); which extracts information from the doublet based on the one of the plurality of time scales which was applied. to the doublet before prior to transmission.

Regarding claim 61, Doi et al. discloses a receiver method (figure 8) for receiving information comprising:

- Receiving a doublet, wherein the doublet comprises a combined pair of substantially matched base signals and wherein one of a plurality of time scales (22 of figure 2) was applied to at least one of the pair of (Bi-18 of figure 2) of substantially matched base signals; and
- Extracts information from the doublet based on the one of the plurality of time scales which was applied. to the doublet.

Regarding claim 64, as followed by the analysis analyzed in claim 61, Doi et al. further discloses (figure 2) that wherein the information comprises a message embedded prior to the transmission of the doublet.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 35, 36, 45, 46, and 53 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Doi et al. (US patent # 4,215,335).

Regarding claims 34 and 35, respectively, as followed by the analysis analyzed in claim 32, Doi et al. differs from the instant claimed invention that it does not show wherein the combining (30 of figure 2) comprises adding or subtracting the time scaled with the other one of pair of base signals to form the doublet.

However, changing the adder (substantially in claim 35) or subtractor (substantially in claim 35) instead of gate (30 of figure 2) is on hand of the ordinary skill in the art.

Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to recognize and implement Doi et al. because it can allow the requirements of the instant claimed invention to perform the functions as desired in the format of doublet.

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Regarding claims 45 and 46, respectively, as followed by the analysis analyzed in claim 42, the analysis is the same as the analysis set forth in claims 34 and 35.

Regarding claim 53, as followed by the limitations analyzed in claim 48, the analysis is the same as the analysis set forth in the combination of claims 34 and 35.

Allowable Subject Matter

6. **Claims 1 – 21, 56 – 60, and 65 – 98 are allowed.** The following is an examiner's statement of reasons for allowance:

Regarding to the claimed invention, the prior art of record fails to show or render obvious of a communication system including a modulator/demodulator for active sensing and navigation. The modulator time-delays and time-scales (compresses or dialates) an arbitrary, noise-like "base signal", then it sums this time-scaled and time-delayed of the base signal with the original base signal to create a doublet. The two signals in the doublet are completely overlapped in time and frequency. This doublet process can be repeated (with different base signals and/or different time-scale/time-delay parameters) and multiple doublet can be summed and simultaneously transmitted. The demodulator uses the applied differential time-scale and differential time-delay to extract information from the doublet.

7. **Claims 23 – 27, 29, 30, 33, 37, 39 – 41, 43, 44, 47, 49 - 51, 54, 62, and 63 are objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (571) 272-3010. The examiner can normally be reached on Monday through Friday from 8:00 AM to 17:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Vanderpuye, Kenneth N. can be reached on (571) 272-3078. The fax phone numbers for this group is (571) 273-3021.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

DXN

December 08, 2005



KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER